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louse: two medals, one in bronze, and one silver, forwarded by the Viscount de Mac Carthy, M.R.I. A., &c.

3. The seal of William, Lord Bishop of Limerick, Ard-fert, and Aghadoe, 1849, presented by the Lord Bishop of Derry.

MONDAY, MAY 22ND, 1854.

LIEUT.-COL. LARCOM, F.R.S., VICE-PRESIDENT,
in the Chair.

THE Secretary read the following paper, by Mr. J. Beete Jukes, on the barometrical measurement of the Peak of Teneriffe.

“On the 1st of May, 1842, I ascended the Peak of Teneriffe, in company with the late Captain F. P. Blackwood, R.N., then commanding H.M.’s surveying Ship, *Fly*, and (Lieutenant, now) Capt. C. F. A. Shadwell, C. B. We carried with us a Newman’s mountain barometer, the neutral point of which was stated at 29·742, attached thermometer 60°, its relative capacity of tube and cistern = $\frac{1}{52}$, and the correction for capillary attraction at ·041. We also took a Mason’s hygrometer and a Wollaston’s barometric thermometer, on which, however, only one observation was made before it was broken.

“We started at seven in the morning, from the Posada in Oratava, halted at mid-day, at a spot called by the guide ‘the Cañada,’ slept at the place called the ‘Estancia de los Ingleses,’ on the flank of the cone, reached the summit by sunrise, and returned to Oratava at two in the afternoon of the next day.

“The following were the observations made:—

“(1) May 1, inn at Oratava, at seven A. M.—Barometer, 30·250; attached thermometer, 70°; detached thermometer, 70°.

“(2) Noon at the Cañada.—Barometer, 23·926 ; attached thermometer, 66°·5 ; detached thermometer, 58°.

“(3) At 4 P.M. at the Estancia de los Ingleses.—Barometer, 21·434 ; attached thermometer, 59° ; detached thermometer, 55° ; Mason’s hygrometer, wet bulb, 36°, dry bulb, 52° ; water boiled at 194° of the barometer thermometer, at 5 P.M., when the temperature of air had sunk to 47°.

“(4) May 2, at 6 A.M. on the summit of the Peak.—Barometer, 19·803 : attached thermometer, 54° ; detached thermometer, 42° ; * Mason’s hygrometer, wet bulb, 33°, dry bulb, 42°.

“Contemporaneous observations were taken this morning at Santa Cruz, by Mr. Evans, of H. M. S. Fly, on a similar barometer, the neutral point of which was 30·257 ; relative capacity $\frac{1}{50}$, the observations being—

“(5) Barometer, 30·212 ; attached thermometer, 70° ; detached thermometer, 70°.

“(6) At 10 A.M. at the Estancia, on descending.—Barometer, 21·438 ; attached thermometer, 59° ; detached thermometer, 50.

“(7) At 4 P.M. at the inn at Oratava.—Barometer, 30·235 ; attached thermometer, 75° ; detached thermometer, 73°.

“Correcting these observations for relative capacity and capillary attraction, we get the following:—

| | Barometer. | | At. Ther. | | Det. Ther. |
|-----|------------|-------|-----------|-------|------------|
| (1) | 30·300 | . . . | 70° | . . . | 70° |
| (2) | 23·856 | . . . | 66·5 | . . . | 58 |
| (3) | 21·316 | . . . | 59 | . . . | 55 |
| (4) | 19·653 | . . . | 54 | . . . | 42 |
| (5) | 30·252 | . . . | 70 | . . . | 70 |
| (6) | 21·320 | . . . | 59 | . . . | 50 |
| (7) | 30·285 | . . . | 75 | . . . | 73 |

* There were hot rocks from which vapour issued not many yards from us ; as snow remained unmelted a little below, the general temperature of the air could hardly have exceeded 32°.

“Calculating the differences of altitude from these observations by the tables and formula (Bailey’s) given in Simms’s ‘Treatise on Mathematical Instruments,’ we get the following:—

| | J. Feet. | H. Feet. |
|---|-------------|-------------|
| Difference of level between (1) & (2) = | 6·712 | 6·673 |
| Ditto, ditto, (2) & (3) = | 3·094 | 3·093 |
| Ditto, ditto, (3) & (4) = | 2·197 | 2·191 |
| Ditto, ditto, (4) & (5) = | 11·880 | 11·826 |
| Ditto, ditto, (4) & (6) = | 2·192 | 2·195 |
| Ditto, ditto, (6) & (7) = | 9·841 | 9·720 |
| Ditto, ditto, (4) & (7) = | 11·930 | 11·877 |

“The numbers given in column J. are from my own calculations; those in column H. are from the calculations of Professor Haughton, who has been kind enough to make them for me ‘from the formula in the “Annuaire du Bureau des longitudes,” with the exception of the correction for the temperature of the air, which is taken from Rudberg’s coefficient (viz., $\frac{1}{492}$).’

“Observations Nos. 1 and 7 were taken at the same spot in Oratava, the height of which was estimated at 45 feet above the sea. Observation No. 5 was taken in Santa Cruz, at a probable height of 50 feet above the sea.

“The total height of the Peak, therefore, will be as follows:—

“By the observations taken in ascending on May 1, and the morning of the 2nd—

$$\begin{aligned} \text{J. } (45 + 6712 + 3094 + 2197) &= 12,048 \text{ feet.} \\ \text{H. } (45 + 6673 + 3093 + 2191) &= 12,002 \text{ ,,} \end{aligned} \quad (\text{A})$$

By the observations taken in descending on May 2—

$$\begin{aligned} \text{J. } (2192 + 9841 + 45) &= 12,078 \text{ feet.} \\ \text{H. } (2195 + 9720 + 45) &= 11,960 \text{ ,,} \end{aligned} \quad (\text{B})$$

By the simultaneous observations on different instruments,
and by different observers, on May 2:—

$$\begin{aligned} \text{J. (11880 + 50)} & \quad . \quad . \quad . \quad = 11930 \text{ feet.} \\ \text{H. (11826 + 50)} & \quad . \quad . \quad . \quad = 11876 \quad ,, \end{aligned} \quad (\text{C})$$

By calculating from the two observations on same day taken
at summit and Oratava—

$$\begin{aligned} \text{J. (11930 + 45)} & \quad . \quad . \quad . \quad = 11975 \text{ feet.} \\ \text{H. (11877 + 45)} & \quad . \quad . \quad . \quad = 11922 \quad ,, \end{aligned} \quad (\text{D})$$

“The mean of these values A, B, C, D,
= 12008 feet, by my calculations.
= 11940 feet, by Professor Haughton’s calculations.

“I may add, that the weather was fine and settled, with a
stratum of clouds at about the height of 5000 to 6000 feet,
above which the atmosphere was perfectly clear. The wind
on the summit, at 6 A. M. on the morning of the 2nd, was very
light from N. by E., while, at Santa Cruz, at the same time,
it was blowing rather freshly from the N. E.

“On the 28th, as we approached the island, with fine clear
weather and a light breeze, Mr. Evans, Master of H.M.S.
Fly, took trigonometrical observations on the Peak with a sex-
tant, measuring a base with the patent log. The results of
these observations gave a height of 12,105 feet for the height
of the Peak.

“The heights assigned by Humboldt, who did not himself
make any observations, are for the

Torsis. Feet.

Estancia de los Ingleses, 1552 = 9921

The summit of the Peak, 1909 = 12204

“The two values deducible from our preceding observa-
tions, for the height of the Estancia, are 9886 and 9851, the
mean of which = 9868, which only differs by 53 feet from that

of Humboldt, although there is a difference of 200 feet in the height of the summit.

“ Von Buch gives the following barometrical observations for the height of the summit :—

| | Barom. | At. Ther. | Det. Ther. |
|--------------------|--------|-----------|------------|
| On the Peak, . . . | 19·801 | . . 60° | . . 52° |
| At Santa Cruz, . . | 30·173 | . . 84 | . . 82 |

From which, using the same method of calculation as before, I should deduce a height of 11,850 feet.

“ If now we take all these observations as independent values, namely—

| | |
|--------------------|-------------------------------|
| Our mean . . . | = 12·008 by my calculations ; |
| Mr. Evans's, . . | = 12·105 |
| Humboldt's height, | = 12·204 |
| Von Buch's, . . | = 11·850 |

we shall find the mean of the whole to be 12,042 feet.

“ On taking our mean by Professor Haughton's calculations at 11·940, we shall get the resulting mean = 12·029 feet.

“ These means agree very closely with the heights deduced from our observations taken in ascending, when we divided the whole height of the mountain into three stages ; and the difference between Professor Haughton's calculations and mine is less for those three observations than for the others. Whether these considerations would be sufficient to give a preferential value to those observations I will not pretend to decide.

“ There is yet one other consideration :—Our two heights of the Peak above the Estancia de los Ingleses, whichever way they are calculated, agree within six feet. They may, therefore, be looked on as very approximately true, and their mean is 2193 feet. The mean of the five values (including Humboldt's) for the height of the Estancia de los Ingleses is 9847 feet, which, added to 2193, gives a total of 12,040 feet for the height of the Peak.

“ The difference between this last value and the former one

is, that it depends on our observations alone, with the single addition of Humboldt's height of the Estancia, leaving out the two extreme values given by Humboldt and Von Buch, for the height of the Peak, and also for the trigonometrical value obtained by Mr. Evans. If we leave out of the calculation Humboldt's height for the Estancia, it would reduce our mean to 12,021.

“It would appear probable from the foregoing remarks that a little over 12,000 feet is very probably the real height of the famous Peak of Teneriffe.”

Mr. J. Huband Smith exhibited a curious slip of large bone found in a cottage in the parish of Donabate, county of Dublin, on which was engraved a coat of arms and several figures of men and animals, referrible to the beginning of the reign of Elizabeth.

Rev. Dr. Todd presented, on the part of Robert Smith, M. D., the cast in plaster of an inscribed stone, situated near Sneam, in the county of Kerry, containing some curious concentric circles and other marks.